

margin, and not including the smaller transverse nervure, but a little anterior to it; a broader and not quite parallel band midway to the tip, including the larger transverse nervure and an equally broad band at tip not arquated: *tergum* purplish toward the tip: *poisers* pale yellowish: *feet* pale honey-yellow.

Length less than one-fifth of an inch.

Dr. Harris appends to this "*Ortalis aenea* Wied."

Baron Osten Sacken sends us the following note regarding this insect:—

Besides the *Trypeta trifasciata* Say, 1831, which you enquire about, there is an *Ortalis trifasciata* Say, Journ. Acad. Philad., vi, 184 (1830); Compl. Writ., ii, 368 (compare my Catal, 1878, p. 186).

This latter, according to Loew (l. c.) is a synonym of *Chaetopsis* (*Ortalis aenea* Wied. But this synonymy can be accepted only if we read in Say's de-

scription "connected with the second band by the *posterior* margin," and not by the *costal* margin, as Say has it (Comp. his description with the figure of the wing in Monogr. N. Amer. Dipt. iii, tab. 9, fig. 19). Loew, l. c., iii, 171, line 10 from bottom, *has overlooked this discrepancy*. However, the species being very common, the synonymy is very probable.

The *Trypeta trifasciata* Say, New Harmony, 1831, from Louisiana, is evidently likewise a *Chaetopsis*, and *perhaps* the same as *C. debilis* Loew, Monogr., iii, 172, from Cuba. Compare the figure of the wing (l. c., fig. 20) with Say's statement "an equally broad band at tip, *not arcuated*." *Tryp. trifasciata* Say should therefore be placed *provisionally* after *debilis*, as a *possible* synonym, but with a query.—C. R. OSTEN SACKEN.

EARLY STAGES OF TRIPTOGON MODESTA.

BY CAROLINE G. SOULE, BROOKLINE, MASS.

On July 13th, 1898, a battered specimen was brought me, found under an electric light in Brandon, Vt. At about 3 p. m. the moth began laying eggs and the following morning had laid eighty-four. On July 14 and 15 she began laying at about 3 p. m., and during these afternoons and nights laid thirty-two and sixteen eggs respectively.

These eggs were 2.5 mm. long and nearly 2 mm. wide at the widest part, ovoid, greenish gray—looking greener at night—and having a pearly lustre. On the second day they became heliotrope-color. On July 20th

they became greenish, showed the larvae distinctly, and the first-laid eggs hatched, giving an egg-period of barely seven days.

Young larva—length 7 mm., slender. Head round, pale green. Body very dark green, the dorsum looking as if undershot with black, except the last two segments which were pale green like the head. The body was rough, and had pale green subdorsal lines from the head to the tips of the anal props. These lines became yellow two days later. There were seven pale-green obliques rougher than the body. The legs

were pale green with red tips; the props pale green; the anal props prolonged at the tips behind, like those of *C. juglandis*. The caudal horn was bright carmine, short, straight, perpendicular, rough, and ending in a seta.

The larvae ate nearly all their egg-shells except a few, which ate only enough to let them crawl out. They were very active, began eating at once, and drank eagerly. They fed on *Populus balsamifera* var. *caudicans*.

July 24th. First molt. Length twelve mm. Head almost triangular, apple green with sparse yellow 'granulation' and with two larger granules at the apex. Face-lines yellow. Body dark green above with subdorsal lines and obliques of bright yellow granules, the last pair of obliques being wider and brighter than the others. On the front edge of the first segment and the rear edge of the second and third segments was a transverse line of larger yellow granules extending from one subdorsal line to the other and largest in the middle. These lines were very conspicuous. The venter was blue-green with whiter granules. Anal plate edged with yellow granules. The feet were red, legs and props blue-green with white granules. The horn was yellow with a dark carmine spot at its base in front, and the whole horn was rough with red granules.

The larvae ate all the cast skin except the mask and horn.

July 27th.—Second molt. Length eighteen mm. when in motion. When at rest the larvae were so bent over that they could not be accurately measured, the head being bent under the front part of the body.

The only changes in coloring were that the subdorsal lines were less distinct; the face lines yellower and broader; the horn was very short, and pinkish-yellow with a double dark brown dot at the base in front; there were dark brown spots on each leg, and on the anal props near the tips; the yellow granules of the transverse lines, on second

and third segments were almost spikes, recalling those on the dorsal line of *C. amyntor*. Molting required only twenty four hours.

July 30.—The legs had become yellow with red tips, and the yellow granules on the first segment were hardly noticeable. The striking points of the larvae were the rich velvety green color, the yellow crests of granules on the second and third segments, and the broad yellow obliques reaching from the substigmatal line to the tip of the caudal horn.

July 31st.—Third molt. Length twenty mm. Head pale green studded with pale yellow granules, and with face lines of brighter yellow granules meeting at the apex. First segment—pale green like the head, and granulated, but with no conspicuous crest of granules. Body—deep moss-green, densely set with tiny yellow granules, except the anal segment, which was bright yellow-green with small yellow granules, and the anal plate was edged with yellow granules and studded with glassy green ones, and had a dark red-brown spot at its tip. The second and third segments had conspicuous crests of yellow "spikes." The obliques were very narrow and of yellow granules, the last pair being broader and yellower. There was a broken substigmatal line of yellow granules from the third to the tenth segments. The legs were yellow with a dark red-brown spot, and red feet. Props were green granulated with yellow, the anal props having a dark brown spot at the tip. The horn was very short, rough, pale yellow. The spiracles were red, and noticeable for the first time.

Aug. 2d.—The larvae had lost the rich moss-green color, and become very blue green, while the golden-yellow marks had grown almost white. In this molt the larvae ate much more, and were quieter.

Aug. 5th. Fourth molt. Length four cm. Body largest at the tenth segment, tapering slightly to the head. Head very white-green

with white irrorations; face of a peculiar pink-purple color with pink face lines. Body—first segment very white-green, anal segment very yellow-green, the other segments very blue-green, all with white irrorations. The subsorsal lines had disappeared; and the obliques were of small white granules, except the last pair which were pinkish, broader, and rougher. The crests on the second and third segments were much less conspicuous, barely noticeable. Mouth parts, legs, and tips of prolegs pink-purple; a band of deep red-purple on the anal prolegs. Spiracles red purple in pink-purple spots. Anal shield heart-shaped, swelling, with the tip dark red-purple. Caudal horn very short, only 1 mm., slender, white, and rough. On the subsorsal line of ten segments was a spot of red-purple,—in some specimens. Others had but few spots. They varied from three spots, on each side of the body, to ten. These spots recalled the red spots of *S. myops*.

Some specimens sent to Miss Ida M. Eliot in Nonquitt, Mass., and fed on *populus tremuloides*, had no red-purple spots.

Aug. 13th.—The first one stopped eating while the last one hatched was molting for the third time, being much smaller and slower of development than any of the others. Length when full-fed 8 cm.

In the last molt the larvae ate voraciously and were very vigorous. In the first and second molts they were very delicate, and many died without any apparent cause.

These larvae are especially interesting because they omit the plain green, unmarked stage common to most sphingid larvae in the first molt, and because they show, in different stages, marks characteristic of three other species, yet are very different from all of them. I have seen no other sphingid eggs which undergo so many changes of color, or which have any color except green, becoming either yellowish or lead color just before hatching.

Aug. 19.—The first pupa cast the larva skin. The pupa was 4 cm. long, rather stout, with eyes and antennae well defined, and wing-covers short in proportion. Its color was green at first, then brown.

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE.—I.

BY HARRISON G. DYAR, WASHINGTON, D. C.

Aplodes mimosaria Guenée. This larva has been briefly described by Walsh and quoted in Packard's works. The description is not only brief, but erroneous, as the larva is entirely without "short velvety hairs" and has none of the structure of *Phobetron*, as is stated by Walsh.

The moths fly early in June, emerging from over-wintering pupae. There is a single annual generation, the six larval stages being slowly passed through, lasting from late June, when the eggs hatch, to September. Observations made on Long Island, N. Y.

Egg. Elliptical, very strongly flattened above and below, the edges sharp, the sides perpendicular, so that the eggs resemble biscuits. One end is depressed, the height being less at one end of the ellipse. Surface strongly reticular, the cell areas appearing almost like granules. Color bright orange, not shining; later red, and just before hatching sordid brown. Size .75 × .6 × .4 mm.

Stage I. Head rounded, smooth, pale brown, slightly streaked with darker; width about .3 mm. Body with a series of triangular subventral projections on joints 5 to 9, bearing setae iv and v which are remote,